

Curriculum Vitae

Mechanical Engineering

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Personal

Full name: Guo Qitong

Foreign language: English (TOEFL 103: R 30 / L 28/ S 21/ W 24)

Education

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| 2018-pres | Beijing Institute of Technology | Master |
| | Major in Mechanical Engineering, GPA: 86 | |
| 2014-2018 | Central South University | Bachelor |
| | Major in Mechanical Design, Manufacture & Automation, GPA: 88 (Rank: Top 5%, Mechatronics Track) | |

Research and Project Experiences

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| 2020-pres | Intelligent washing water saving system based on turbidity detection |
| | <ul style="list-style-type: none">• Laundry wastewater is recycled and purified by classification, laundry time and water consumption are intelligent controlled through the fuzzy control principle• Water saving efficiency is ~ 45%, and power saving efficiency is up to 10% |
| 2019-pres | Laser printing of UV curing materials |
| | <ul style="list-style-type: none">• Laser induced forward transfer (LIFT) was applied as printing method, time resolved imaging was used to figure out the dynamic process of printing and temporally shaped fs-laser was used to obtain smaller printing resolution• Printing volume resolution less than 20 pL and 3D micro-structure (microfluidic channel, micro-lens array) were obtained |
| 2018-pres | Teeth composition detection by temporally shaped fs-LIBS |
| | <ul style="list-style-type: none">• Using basic machine learning method (PCA, PLS-DA) to do dimensionality reduction and classification of the original laser induced breakdown spectrum data for three different dental compositions, and to predict the unknown tooth composition• The accuracy of the established classification detection model is more than 97.7% and the model is also reliable in predicting unknown data |
| 2016 | Central South University Formula Racing Team/Electric |
| | <ul style="list-style-type: none">• Worked in the electrical department, responsible for driving motor control, signal and power cable connection, design of water-cooling system and battery box, sensor selection• Formula Student Electric China (FSEC)-2016 team rank: 16 / 32 |

Research Skills

Programming (C++, MATLAB, LabVIEW), Data Processing (Origin), Electronic Design (Keil C51, Arduino, Multisim, Proteus), Robot Operating System (ROS)

Publications

1. Wang, M., **Guo, Q.**, Wang, S., Zhu, W., Tian, F., Wei, Y., ... & Yang, J. (2020). Interference femtosecond laser stamping of micro-grating structures and time-resolved observation of its dynamics. *Optics Express*, 28(12), 18376-18386.
2. Wang, M., Jiang, L., Wang, S., **Guo, Q.**, Tian, F., Chu, Z., ... & Lu, Y. (2019). Multiscale visualization of colloidal particle lens array mediated plasma dynamics for dielectric nanoparticle enhanced femtosecond laser-induced breakdown spectroscopy. *Analytical chemistry*, 91(15), 9952-9961.
3. Wang, M., Li, D., Liu, K., **Guo, Q.**, Wang, S., & Li, X. (2020). Nonlinear Optical Imaging, Precise Layer Thinning, and Phase Engineering in MoTe₂ with Femtosecond Laser. *ACS nano*.

Areas of Interests

Automation, Robotics, 3D Printing, Micro/nano Fabrication, Femtosecond Laser

Honors and Awards

2019	Graduate Academic scholarship, Beijing Institute of Technology (¥3,500.00)
2018	Graduate Academic scholarship, Beijing Institute of Technology (¥8,000.00)
2018	Annual meeting of innovation and Entrepreneurship "Excellent Paper Award", Central South University
2018	The second prize of excellent undergraduate graduation design, Central South University
2015	National Encouragement Scholarship (¥5,000.00)
2015-2017	Academic Year Scholarship, Central South University (¥1,500.00 * 3 years)
2015-2017	University-level outstanding students, Central South University (3 times)